General

Guideline Title

Ultrasound in twin pregnancies.

Bibliographic Source(s)

Morin L, Lim K. Ultrasound in twin pregnancies. J Obstet Gynaecol Can. 2011 Jun;33(6):643-56. PubMed

Guideline Status

This is the current release of the guideline.

Recommendations

Major Recommendations

The quality of evidence (I-III) and classification of recommendations (A-L) are defined at the end of the "Major Recommendations" field.

Sonographic Determination of Chorionicity and Amnionicity

Recommendations

1. All patients who are suspected to have a twin pregnancy on first trimester physical examination or who are at risk (e.g., pregnancies resulting from assisted reproductive technologies) should have first trimester ultrasound performed. (II-2A)
2. Every attempt should be made to determine and report amnionicity and chorionicity when a twin pregnancy is identified. (II-2A)

Determining Gestational Age in Twin Pregnancies

Recommendations

3. Although the accuracy in confirmation of gestational age at the first and second trimester is comparable, dating should be done with first trimester ultrasound. (II-2A)
4. Beyond the first trimester, it is suggested that a combination of parameters rather than a single parameter should be used to confirm gestational age. (II-2C)
5. When twin pregnancy is the result of in vitro fertilization, accurate determination of gestational age should be made from the date of embryo transfer. (II-1A)
6. There is insufficient evidence to make recommendation of which fetus (when discordant for size) to use to date a twin pregnancy. However, to avoid missing a situation of early intrauterine growth restriction in one twin, most experts agree that the clinician may consider dating pregnancy using the larger fetus. (III-C)

Screening for Anomalies in Twin Pregnancies

Nuchal Translucency and Maternal Age in Twins

Recommendation

7. In twin pregnancies, aneuploidy screening using nuchal translucency measurements should be offered. (II-2B)

Congenital Malformations

Summary Statement

There are insufficient data to make recommendations on repeat anatomical assessments in twin pregnancies. Therefore, a complete anatomical survey at each scan may not be needed following a complete and normal assessment. (III)

Recommendation

8. Detailed ultrasound examination to screen for fetal anomalies should be offered, preferably between 18 and 22 weeks' gestation, in all twin pregnancies. (II-2B)

Screening for Preterm Birth

Summary Statement

There are insufficient data to recommend a routine preterm labour surveillance protocol in terms of frequency, timing, and optimal cervical length thresholds. (II-2)

Recommendation

9. When ultrasound is used to screen for preterm birth in a twin gestation, endovaginal ultrasound measurement of the cervical length should be performed. (II-2A)

Assessment of Fetal Growth

Summary Statements

- Singleton growth curves currently provide the best predictors of adverse outcome in twins and may be used for evaluating growth abnormalities. (III)
- It is suggested that growth discordance be defined using either a difference (20 mm) in absolute measurement in abdominal circumference or a difference of 20% in ultrasound derived estimated fetal weight. (II-2)

Fetal Surveillance

Summary Statement

Although there is insufficient evidence to recommend a specific schedule for ultrasound assessment of twin gestation, most experts recommend serial ultrasound assessment every 2 to 3 weeks, starting at 16 weeks of gestation for monochorionic pregnancies and every 3 to 4 weeks, starting from the anatomy scan (18 to 22 weeks) for dichorionic pregnancies. (II-1)

Recommendation

10. Increased fetal surveillance should be considered when there is either growth restriction diagnosed in one twin or significant growth discordance. (II-2A)

Use of Umbilical Artery Doppler Velocimetry in Twins

Summary Statement

Umbilical artery Doppler may be useful in the surveillance of twin gestations when there are complications involving the placental circulation or fetal hemodynamic physiology. (II-2)

Recommendation

11. Umbilical artery Doppler should not be routinely offered in uncomplicated twin pregnancies. (I-E)

Assessment of Amniotic Fluid

Summary Statement

Although many methods of evaluating the level of amniotic fluid in twins (deepest vertical pocket, single pocket, amniotic fluid index) have been described, there is not enough evidence to suggest that one method is more predictive than the others of adverse pregnancy outcome. (II-3)

Recommendation

12. For defining oligohydramnios and polyhydramnios, the ultrasonographer should use the deepest vertical pocket in either sac: oligohydramnios when <2 cm and polyhydramnios when >8 cm. (II-2B)

Diagnosis of Rare Obstetrical Complications Unique to Twins

Summary Statement

Referral to an appropriate high-risk pregnancy centre is indicated when complications unique to twins are suspected on ultrasound. (II-2) These complications include:

1. Twin-to-twin transfusion syndrome
2. Monoamniotic twins gestations
3. Conjoined twins
4. Twin reversed arterial perfusion sequence
5. Single fetal death in the second or third trimester
6. Growth discordance in monochorionic twins

Definitions:

Quality of Evidence Assessment*

I: Evidence obtained from at least one properly randomized controlled trial

II-1: Evidence from well-designed controlled trials without randomization

II-2: Evidence from well–designed cohort (prospective or retrospective) or case–control studies, preferably from more than one centre or research group

II-3: Evidence obtained from comparisons between times or places with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of treatment with penicillin in the 1940s) could also be included in this category.

III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees

*Adapted from the Evaluation of Evidence criteria described in the Canadian Task Force on Preventive Health Care.

Classification of Recommendations†

A. There is good evidence to recommend the clinical preventive action.

B. There is fair evidence to recommend the clinical preventive action.

C. The existing evidence is conflicting and does not allow to make a recommendation for or against use of the clinical preventive action; however, other factors may influence decision-making.

D. There is fair evidence to recommend against the clinical preventive action.

E. There is good evidence to recommend against the clinical preventive action.

L. There is insufficient evidence (in quantity or quality) to make a recommendation; however, other factors may influence decision-making.

†Adapted from the Classification of Recommendations criteria described in the Canadian Task Force on Preventive Health Care.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Twin pregnancy and complications of twin pregnancy:

- Chorionicity and amnionicity
- Aneuploidy
- Congenital malformations
- Preterm birth
- Fetal growth abnormality
- Oligohydramnios and polyhydramnios
- Twin-to-twin transfusion syndrome
- Monoamniotic twins gestations
- Twin reversed arterial perfusion sequence
- Conjoined twins
- Intrauterine death

Guideline Category

Assessment of Therapeutic Effectiveness

Management

Prevention

Risk Assessment

Screening

Clinical Specialty

Obstetrics and Gynecology

Pediatrics

Preventive Medicine

Radiology

Intended Users

Advanced Practice Nurses

Physicians

Guideline Objective(s)

- To review the literature with respect to the use of diagnostic ultrasound in the management of twin pregnancies
- To make recommendations for the best use of ultrasound in twin pregnancies

Target Population

Women who are pregnant with twins and their fetuses

Interventions and Practices Considered

1. Sonographic determination of chorionicity and amnionicity
2. Determining gestational age
3. Screening for anomalies
4. Screening for preterm birth
5. Assessment of fetal growth
6. Fetal surveillance
7. Use of umbilical artery Doppler velocimetry
8. Assessment of amniotic fluid
9. Diagnosis of rare obstetrical complications

Major Outcomes Considered

- Incidence of perinatal mortality and morbidity
- Incidence of short- and long-term neonatal morbidity in twin pregnancies
- Sensitivity, specificity, and positive predictive value of ultrasound measurements

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Searches of Unpublished Data

Description of Methods Used to Collect/Select the Evidence

Published literature was retrieved through searches of PubMed and the Cochrane Library in 2008 and 2009 using appropriate controlled vocabulary (e.g., twin, ultrasound, cervix, prematurity) and key words (e.g., acardiac, twin, reversed arterial perfusion, twin-to-twin transfusion syndrome, amniotic fluid). Results were restricted to systematic reviews, randomized control trials/controlled clinical trials, and observational studies. There were no date restrictions. Studies were restricted to those with available English or French abstracts or text. Searches were updated on a regular basis and incorporated into the guideline to September 2009. Grey (unpublished) literature was identified through searching the websites of health technology assessment and health technology assessment-related agencies, clinical practice guideline collections, clinical trial registries, and national and international medical specialty societies.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Quality of Evidence Assessment*

I: Evidence obtained from at least one properly randomized controlled trial

II-1: Evidence from well-designed controlled trials without randomization

II-2: Evidence from well–designed cohort (prospective or retrospective) or case–control studies, preferably from more than one centre or research group

II-3: Evidence obtained from comparisons between times or places with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of treatment with penicillin in the 1940s) could also be included in this category.

III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees

*Adapted from the Evaluation of Evidence criteria described in the Canadian Task Force on Preventive Health Care.

Methods Used to Analyze the Evidence

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

The evidence collected was reviewed by the Diagnostic Imaging Committee of the Society of Obstetricians and Gynaecologists of Canada, with input from members of the Maternal Fetal Medicine Committee and the Genetics Committee of the Society of Obstetricians and Gynaecologists of Canada (SOGC).

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Not stated

Rating Scheme for the Strength of the Recommendations

Classification of Recommendations†

A. There is good evidence to recommend the clinical preventive action.

B. There is fair evidence to recommend the clinical preventive action.

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E. There is good evidence to recommend against the clinical preventive action.

L. There is insufficient evidence (in quantity or quality) to make a recommendation; however, other factors may influence decision-making.

†Adapted from the Classification of Recommendations criteria described in the Canadian Task Force on Preventive Health Care.

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

This Clinical Practice Guideline has been prepared by the Diagnostic Imaging Committee, reviewed by the Genetics Committee and the Maternal Fetal Medicine Committee, and approved by the Executive and Council of the Society of Obstetricians and Gynaecologists of Canada.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Facilitation and optimization of the use of ultrasound in twin pregnancy

Potential Harms

More frequent surveillance may result in significantly higher false positive rates for intrauterine growth restriction (IUGR).

Qualifying Statements

Qualifying Statements

This document reflects emerging clinical and scientific advances on the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed. Local institutions can dictate amendments to these opinions. They should be well documented if modified at the local level.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Foreign Language Translations

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Staying Healthy

IOM Domain

Effectiveness

Timeliness

Identifying Information and Availability

Bibliographic Source(s)

Morin L, Lim K. Ultrasound in twin pregnancies. J Obstet Gynaecol Can. 2011 Jun;33(6):643-56. PubMed

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2011 Jun

Guideline Developer(s)

Society of Obstetricians and Gynaecologists of Canada - Medical Specialty Society

Source(s) of Funding

Society of Obstetricians and Gynaecologists of Canada

Guideline Committee

Diagnostic Imaging Committee

Composition of Group That Authored the Guideline

Principal Authors: Lucie Morin, MD, Outremont QC and Kenneth Lim, MD, Vancouver BC

Diagnostic Imaging Committee: Lucie Morin, MD (*Chair*), Outremont QC; Kenneth Lim, MD (*Co-Chair*), Vancouver BC; Stephen Bly, MD, Ottawa ON; Kimberly Butt, MD, Fredericton NB; Yvonne M. Cargill, MD, Ottawa ON; Gregory Davies, MD, Kingston ON; Nanette Denis, CRGS, Saskatoon SK; Robert Gagnon, MD, Montreal QC; Marja Anne Hietala-Coyle, RN, Halifax NS; Annie Ouellet, MD, Sherbrooke QC; Shia Salem, MD, Toronto ON; and Vyta Senikas, MD, Ottawa ON

Special Contributor: Jon Barrett, MD, Toronto ON

Genetics Committee: R. Douglas Wilson, MD (*Chair*), Calgary AB; François Audibert, MD, Montreal QC; Jo-Ann Brock, MD, Halifax NS; June Carroll, MD, Toronto ON; Lola Cartier, MSc, Montreal QC; Alain Gagnon, MD, Vancouver BC; Jo-Ann Johnson, MD, Calgary AB; Sylvie Langlois, MD, Vancouver BC; Lynn Murphy-Kaulbeck, MD, Moncton NB; Nanette Okun, MD, Toronto ON; Melanie Pastuck, RN, Cochrane AB

Maternal Fetal Medicine Committee: Robert Gagnon, MD, Montreal QC; Lynda Hudon, MD (*Co-Chair*) Montreal QC; Melanie Basso, RN, Vancouver BC; Hayley Bos, MD, London ON; Joan M. Crane, MD, St. John's NL; Gregory Davies, MD, Kingston ON; Marie-France Delisle, MD, Vancouver BC; Savas Menticoglou, MD, Winnipeg MB; William Mundle, MD, Windsor ON; Annie Ouellet, MD, Sherbrooke QC; Tracy Pressey, MD, Vancouver BC; Christy Pylypjuk, MD, Saskatoon SK; Anne Roggensack, MD, Calgary AB; Frank Sanderson, MD, Saint John NB

Financial Disclosures/Conflicts of Interest

Disclosure statements have been received from all members of the committees.

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available in Portable Document Format (PDF) from the Society of Obstetricians and Gynaecologists of Canada (SOGC) Web site. Also available in French from the SOGC Web site.

Print copies: Available from the Society of Obstetricians and Gynaecologists of Canada, La société des obstétriciens et gynécologues du Canada (SOGC) 780 promenade Echo Drive Ottawa, ON K1S 5R7 (Canada); Phone: 1-800-561-2416.

Availability of Companion Documents

None available

Patient Resources

None available

NGC Status

The NGC summary was completed by ECRI Institute on October 12, 2011. The information was verified by the guideline developer on November 14, 2011.

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